Journal of Luminescence 66&67 (1995) 535–537

JOURNAL OF LUMINESCENCE

# Subject Index

0π-pulse 45

Absorbed surface molecule 511
Aging effect 315
Anharmonic phonon decay 362

BCS tunneling state 483
Biexcitons 396, 410, 429
Brewster angle 81

Charge transfer dynamics 511
Circular polarized luminescence 268
Coherence 78, 94
Coherent dynamics 478
Coherent polarization 40
Colloids 315
Concentration dependence 259
Conjugated polymers 365
Correlated crystal field 272
Correlation energy 473
Coulomb gap 521
Coulomb glass 521

Data compression 70
Delocalized states 327
Dephasing 84
Dephasing time 264
Depolarization 169
Dipole reorientation 169
Dipole–dipole interaction 453
Dislocations 249
Disordered materials 358
Disordered systems 375
Dispersive energy transfer 208
Dispersive lineshape 157
Dissipation 516
Donor–acceptor complexes 506
Donor–acceptor recombination 462
Double resonance 61
Dressed state 61
Dynamical bonds 174

EDEPR 462
Electroluminescence 423
Electron transfer 102, 506, 516
Electron–hole BCS states 78
Electron–hole recombination 423
Electron–phonon coupling 240, 305, 365
Electron–phonon coupling, linear 152
Electron–phonon interaction 253, 323
Energy gap laws 224
Energy relaxation dynamics 310
Energy transfer 1, 228, 290, 294
Energy transfer processes 198
EXAFS 174
Excited state 133
Excited state absorption 115
Excited state population grating 128
Excitons 51, 65, 84, 213, 327, 341, 433, 468, 478
Exciton,2P 414
Exciton, charge transfer 97, 383, 453
Exciton coherence 45
Exciton, confined 401, 406, 443
Exciton dephasing 81
Exciton, high density 448
Exciton lifetimes 438
Exciton localization 142
Exciton migration 337
Exciton, self-trapped 389, 418, 438
Exciton transport 448
Exciton–lattice interaction 443

Femtosecond electron relaxation 455
Femtosecond pump/probe spectroscopy 379, 383
Femtosecond spectroscopy 375, 418
Fermi resonance 125
Fine structure 51
Fluorescence lifetime 136
Fluorescence line narrowing 290, 349
Fluorescence microscopy 232
Flush photolysis 418
Four wave mixing 40, 84, 429
Four wave mixing, degenerate 133
Four wave mixing, nondegenerate (NDFWM) 102

Four wave mixing, picosecond pulse 128
Frenkel excitons 40
Frequency swept pulses 70

Glass forming matrices 310
Glass transition 13
Granular rod model 521

$H^-$ local modes 253
Halogen atom desorption 389
High–density electron–hole system 483
High–$T_c$ cuprates 379
Holeburning 1, 19, 36, 164, 179, 299
Holeburning efficiencies 25
Holeburning, luminescence 142
Holeburning, persistent 136
Holeburning, persistent spectral 8, 142, 157
Holeburning, photon-gated 184
Holeburning, population 29
Holeburning, spectral 8
Holeburning, transient 13, 496
Homogeneous linewidth 157
Hydrogen bond dynamics 146
Hyper-Raman scattering 414
Hyper-Rayleigh scattering 414
Hyperfine levels 184
Hyperfine transitions 107

Impulsive stimulated light scattering 375
Incoherent energy transfer 327
Inhomogeneous broadening 278, 305

Lanthanide ions 203
Laser spectroscopy 219
Lattice relaxation 511
Line narrowing spectroscopy 496
Low frequency phonon modes 370
Luminescence 294
Luminescence enhancement 315

Magnetic circular dichroism 19
Marcus inverted region 516
Markov approximation 506
Master equation 506
Matrix isolation 19
Mesoscopic 94
Methyl group tunneling 146
Microcrystallites 443
Mixed aggregates 337
Mössbauer spectra 345
Multiexciton state 323
Multiphonon processes 224
Multiphonon relaxation 240

Nanoparticles 315, 345
Near-infrared luminescence 268
Nonequilibrium phonons 349, 362
Nonlinear behavior 107
Nonlinear optical response 111, 125, 128, 396, 410, 448
Nonlocal susceptibility 94
Nonmotional narrowing effect 264
Nonradiative decay 224
Nonstoichiometric semiconductors 455

One-dimensional system 120
Optical bistability 125
Optical Kerr effect 370, 375
Optical limiting 115
Optical memory 74
Optical nutation 78
Optical pumping 179
Optical spectroscopy 305
Optical Stark effect 48
Optical transient grating 453
Optical-RF resonance 107
Optically detected magnetic resonance 236
Organic binary molecules 102
Organic glasses 1
Organic light-emitting diodes 423
Organic superlattices 125

Paramagnetic defects 462
Particle modes 349
Phonon asssited excitation 319
Phonon coupling 319
Phonon density of states 55
Photoconducting antennas 488
Photodoping effects 379
Photoexcited free-carriers 111
Photoionization 179, 184, 526
Photoluminescence 249, 294, 345, 526
Photoluminescence linewidth 332
Photoluminescence – magnetic effects of 468
Photon avalanche 190
Photon echo 74
Photon echo, accumulated 337
Photon echo, incoherent 55
Photon echo, stimulated 51, 70
Photostructural changes 174
Picosecond time resolved spectroscopy 208
Plasma switching 362
Polarization dependence 51
Polarization ratios 438

Polarization spectroscopy 396
Polarons 120
Polymers 133, 341
Protein dynamics 152
Proton transfer 146
Proton tunneling 146
Proximity effect 483
Pump-probe spectroscopy 65, 97, 406

Quantum beats 51, 61, 65, 84
Quantum dots 142, 401, 406
Quantum fluctuations 473
Quantum size effect 345
Quantum wells 429, 455, 468, 493

Radiation–matter interaction 94
Raman beam cleanup 89
Raman coupled model 48
Random phase approximation 473
Rare earths 294
Reaction rate 516
Reduced density matrix 97, 506
Relaxation 78
Resonance fluorescence spectroscopy 152
Resonant Rayleigh scattering 81, 370
Resonant secondary emission 264
RF-double resonance 36

Second harmonic generation 493
Self-focusing 111
Self-induced transparency 45
Self-trapped excitation 120
Self-trapped states 323
Self-trapping process 383
Semiconductors 78, 462
Semiconductors, one-dimensional 323
Single crystal fibers 228
Single molecule fluorescence 232
Site selective spectroscopy 278, 341, 358
Sol–gel growth 332
Sol–gel technology 349
Solid–state Raman lasers 89
Solitons 97, 120, 365
Solvent shifts 305
Spectral diffusion 1
Spectral holes 179, 526
Spectral jumps 232
Spectroscopy 285
Spectroscopy (argon laser excitation) 244
Stepwise/cooperative up-conversion 203
Structural defects 249
Structural fluctuations 13
Subgap absorption 365
Superfluorescence 259

Temperature-dependent holewidths 8
Temperature-dependent luminescence 332
Thermally induced barrier crossing 136
Three-body energy transfer 203
THz spectroscopy 488
Time-resolved fluorescence spectrum 310
Time-resolved luminescence 341, 455
Time-resolved secondary emission 511
Transient grating 102
Transient nutation 61
Transition probabilities 25
Triplet metal-to-ligand charge transfer 496
Triplet state relaxation 236
Two- and three-level transitions 107
Two-level systems 48
Two-photon absorption 418, 433
Two-photon absorption, sequential 198
Two-photon processes 48
Two-photon spectroscopy 272
Two-pulse interferogram 81

Ultrafast far-infrared radiation 362
Universality 358
Up-conversion 190, 198, 213, 219, 228

Vibronic transitions 240
Visible luminescence 319

Weighted density of states 358

Z-scan 115
Z-scan, nanosecond pulse 111
Zeeman levels 29
Zeeman spectroscopy 253
Zero-phonon line 259

Journal of Luminescence 66&67 (1995) 539–540

JOURNAL OF LUMINESCENCE

# Materials Index

$\alpha$-$Fe_2O_3$ 345
$\beta''$ alumina 164
$\beta$-carotene 55
$\gamma$-$Al_2O_3$:$Cr^{3+}$ 349
$\gamma$-picoline crystals 146

Acetonitrile 370
Alkali-halides 259
Alkaline-earth mixed halides 25
Amorphous selenium 174
Amorphous water 299
Anthracene 208
Argon matrices 19

$Ba(NO_3)_2$ 89
$BiI_3$ 443, 448

$C_{60}$ single crystals 249
$C_{60}/C_{70}$ doped phosphate glass 128
$CaF_2$ 29, 36, 198
$CaF_2$:$Ce^{3+}$ 253
$CaF_2$:$Er^{3+}$ 253
$CaF_2$:$Pr^{3+}$ 136
$CaF_2$:$Sm^{3+}$ 253
$CaF_2/LaF_3$ 8, 184
$CaF_2/YF_3$ 8
Calcium aluminate glass 285
$CdBr_2$ 438
$CdI_2$ 443
CdS 45
CdS nanocrystals 332
$Ce^{3+}$ 240, 253
Conjugated polymers 97
$Cr^{3+}$ 228, 349, 526
$Cr^{4+}$ 285
$CsCdBr_3$ 213
CuCl 142, 396, 401, 406, 410
CuI 142
$Cu_2O$ 433

Elpasolites 203, 272
$Er^{3+}$ 190, 198, 224, 240, 253
$Er^{3+}$:$Cr^{3+}$:$LiNbO_3$ 228
$Eu^{3+}$ 8, 29, 164, 184, 219, 268, 290, 294

Fluorite 169, 219
Fluorophosphate glass 290
Free-base phthalocyanine 299
Fullerenes 128, 244, 383

Ga–La–sulphide glass 278
GaAs 488
GaAs/AlAs 493
GaAs/AlGaAs 81, 493
GaAs/AlGaAs superlattices 468
GaAs/InGaAs 455
GaP 111
GaSe 51
$Gd_2(MO_4)_3$ 268
$Gd^{3+}$ 240

$Ho^{3+}$ 213

InP 488
Ionic halides 389

KCl 208
KI 418

$LaF_3$ 8, 184
$LaF_3$:$Pr^{3+}$ 362
$LiNbO_3$ 190, 228
$LiYF_4$ 240

Metal di-imine complexes 496
Metal-substituted myoglobin 152
Metallopthalocyanines 19
Methyl orange 133
$Mn^{2+}$ doped ZnS 315
MX chains 120
Myoglobin 13

$(n\text{-}Bu4N)_2[MoCu_3OS_3(NCS)_3]$ 115
NaCl 401, 406
$NaNO_2$ 264
$Nd^{3+}$ 240, 294
$Nd_2CuO_4$ 379
NV center in diamond 61, 107

$O_2^-$-molecule 259
Organic dyes 370
Organometal chelates 236

PIC J aggregates 40
PIC-I and azaPIC-I 337
PLZT ceramic 294
Poly(methylphenylsilane) 341
Polyacetylene 365
Polyanilines 521
Polycyclic arenes 305
Polysilane 423
Porous silicon 319
Porphyrin dimers 102
$Pr^{3+}$ 8, 36, 70, 136, 179, 203, 240, 278, 362
Pseudo-isocyanine 157
Pthalocyanine 102
PVB and PBA organics 358

Rare-earth ions 169
Rhodamine dyes 310

Silica:$Er^{3+}$ 224
$SiO_2$ and $SiO_2/TiO_2$ gels 358
$Sm^{2+}$ 25
$Sm^{3+}$ 253
Solvent glasses 305
$SrF_2:Pr^{3+}$ 136
$SrTiO_3:Cr^{3+}$ 526

$Tb^{3+}$ 203, 240
Terbium(III) complexes 272
Terrylene 232
$Tm^{3+}$ 198, 213, 240

YBaCuO 379
$YF_3$ 8
$Y_2O_3:Pr^{3+}$ 179
$Y_2SiO_5:Pr^{3+}$ 70
$Yb^{3+}$ 240
$YbF_3:Pr^{3+}:Tb^{3+}$ 203

ZBLAN:$Er^{3+}$ 224
ZnMb 310
ZnS 315
ZnSe 65, 84, 429, 478
ZnSe epilayers 478
ZnSe films 414
ZnSe/GaAs 414